

Remarks

In the Final Office Action dated October 3, 2008, the following rejections are presented: claim 22 stands rejected under 35 U.S.C. § 112(1); claim 27 stands rejected under 35 U.S.C. § 112(2); claims 1-10 and 21-28 stand rejected under 35 U.S.C. § 102(b) over the Habberger reference (U.S. Patent No. 6,417,075); claims 1-2, 4-10, 21-22 and 25-28 stand rejected under U.S.C. § 102(b) over the Schrantz reference (U.S. Patent No. 5,552,345); claims 1-2, 4-6, 9-10, 21-22 and 25-28 stand rejected under U.S.C. § 102(a) and 102(e) over the Chong reference (U.S. Patent No. 6,544,863); claims 9 and 28 stand rejected under U.S.C. § 103(a) over the Habberger reference; and claims 3, 7-9, 23 and 28 stand rejected under U.S.C. § 103(a) over the Chong reference. Applicant traverses all of the rejections and, unless explicitly stated by the Applicant, does not acquiesce to any objection, rejection or averment made in the Office Action.

Applicant respectfully traverses the § 112(1) rejection of claim 22 because claim 22 is fully supported by Applicant's disclosure. According to M.P.E.P. § 2163.04 "The examiner has the initial burden of presenting by a preponderance of evidence why a person skilled in the art would not recognize in an applicant's disclosure a description of the invention defined by the claims." In this instance, the Examiner acknowledges that support for claim 22 can be found in paragraph 0031 of Applicant's specification, which discusses the second layer being silicon oxide. Applicant notes that further support for claim 22 can be found, for example, in paragraph 0017 of Applicant's specification. As such, Applicant has complied with the written description requirement. Accordingly, the § 112(1) rejection of claim 22 is improper and Applicant requests that it be withdrawn.

Applicant respectfully traverses the § 112(2) rejection of claim 27 because claim 27 does particularly point out and distinctly claim Applicant's invention. Applicant submits that aspects of claim 27 directed to the structures being included at selected locations in the intermediate layer where stress originating from the dilatation mismatch is likely to occur would be clear to the skilled artisan in view of Applicant's disclosure, which provides examples of locations at which stress is usually high. *See, e.g.*, paragraph 0014. Aspects of Applicant's invention are directed to stress relief that involves placing structures at selected locations to absorb stress that would otherwise occur in the absence of these structures (*i.e.*, the structures are placed at locations where stress is likely to occur, examples of which are

provided in Applicant's specification as discussed above). Thus, claim 27 would be clear to the skilled artisan in view of Applicant's disclosure. Accordingly, the § 112(2) rejection of claim 27 is improper and Applicant requests that it be withdrawn.

Applicant respectfully traverses the § 102/§ 103(a) rejections of claims 1-10 and 21-28 (rejected individually over the Habberger, Schrantz and Chong references) because the Examiner has failed to provide correspondence for each of the recited features. In particular, none of the cited references teach or suggest a composite substrate where the intermediate layer (made of second material exhibiting a dilatation mismatch with a first material) includes structures of the second material arranged to absorb stresses originating from the dilatation mismatch. Instead, the Examiner points to certain features in each reference, and improperly concludes that such features must inherently perform the claimed stress relief function. As discussed further below, the rejections each rely upon a structure produced during an intermediate stage of respective manufacturing processes taught by the references (as acknowledged by the Examiner), with the relied upon portions of the references no longer forming a composite structure after processing and the references fail to make any mention of stress relief being attributed to these relied upon portions.

In contrast, Applicant's specification discusses various aspects that may contribute to the stress relief function of the structures, including the dimensions of the structures (*see, e.g.*, paragraph 0015 and claim 7), the extension of the structures into the carrier (*see, e.g.*, paragraph 0029 and claims 3 and 23), the provision of rounded corners on the structures (*see, e.g.*, paragraph 0014 and claim 24), the particular structure geometry (*see, e.g.*, paragraphs 0019 and 0035 and claims 9 and 28), and so forth. As an example, such stress relief function is not inherent in such cited teachings where the dimensions and geometries of the structures do not allow stress-induced dislocations in a structure to migrate to a free surface of the structure for elimination (*see, e.g.*, claim 25). In the face of such a variety of factors, the claimed stress relief function cannot properly be considered an inherent property to structures produced during intermediate stages of manufacturing processes that apparently do not even consider stress relief to be an issue. The following discussion particularly addresses the pertinent features from each of the references.

The Haberger reference discloses slots in a sacrificial bonding layer that are provided for the supply and extraction of an etchant. Because the slots are part of a sacrificial layer, they are no longer present after processing, and therefore could not contribute to stress relief. Applicant finds nothing in Haberger related to the use of intermediate layer structures for the relief of stresses caused by dilatation mismatch with the material of the intermediate layer, as claimed.

The Schrantz reference discloses scribe lines for separating circuit dies after processing. Once the dies are separated, the scribe line structure no longer exists, and therefore could not contribute to stress relief. Applicant finds nothing in Schrantz related to the use of intermediate layer structures for the relief of stresses caused by dilatation mismatch with the material of the intermediate layer, as claimed.

The Chong reference discloses thin etch stop portions formed during a directional etching process of making multiple height subsurface layers. After processing, the etch stops no longer exist, and therefore could not contribute to stress relief. Applicant finds nothing in Chong related to the use of intermediate layer structures for the relief of stresses caused by dilatation mismatch with the material of the intermediate layer, as claimed.

In view of the above the § 102/§ 103(a) rejections of claims 1-10 and 21-28 are improper and Applicant requests that they be withdrawn.

In view of the remarks above, Applicant believes that each of the rejections/objections has been overcome and the application is in condition for allowance. Should there be any remaining issues that could be readily addressed over the telephone, the Examiner is asked to contact the agent overseeing the application file, Peter Zawilski, of NXP Corporation at (408) 474-9063.

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